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Mad about the LAD

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Abstract

There is ample evidence instruction somehow alters adult second language (L2) learners' linguistic behavior, yet it is notoriously difficult to determine whether behavior is based on restructuring of the learner's linguistic competence or on the incorporation of general knowledge. Krashen (1985) and Schwartz (1993) argue against instruction restructuring linguistic competence, yet the counter-argument - that instruction serves to enhance adult L2 development - appears more persuasive. Far too little is known about the effect of metalinguistic processing on a developing linguistic system to resolve the general cognitive - linguistic mechanism interface issue. Taking up Schwartz's plea for the application of linguistic theory to address the issue, we investigate the effect of conscious linguistic awareness on the developing L2 grammars of three American adolescents who spent a year in Germany and generally find no effect with one important exception: focus on form by one learner results in a detour which impedes rather than enhances his syntactic development.

Introduction

For three decades researchers have been debating the issue of whether adult second language learners are guided by the same mechanisms – call it the Language Acquisition

Device (LAD) – as children are when acquiring either their first or their second language. Whether acknowledged or not, what continues to provide fuel to the debate is the unchallenged observation that most post-puberty learners fail to achieve native linguistic competence in their second language. But the evidence that post-puberty second language grammars are constrained by the same principles as children's grammars is considered by many to be compelling.

Sources of knowledge in child and adult L2 acquisition

Complicating this debate on several levels is the propensity for adult second language learners to draw on three sources of knowledge where child second language learners only draw on two. The child's or adult's initial state upon beginning to acquire an L2 is first language knowledge and (assumed by many) the principles and parameters of Universal Grammar. The third source of knowledge adults can draw on is knowledge about language, arrived at through the operation of general cognitive structures. Sharwood Smith (2002) terms this the Metalinguistic Acquisition Device - the MAD.[1]

The availability of an additional source of knowledge would be expected to promote the development of L2 proficiency, and indeed that this prediction is fulfilled is regularly assumed.[2] Well-known reports of MAD use enhancing the operation of LAD use includes Ioup, Boustagui, El Tigi and Moselle's (1994) study of two near-native English speakers of L2 Arabic whose initial exposure occurred well after puberty. Although one had acquired Arabic through wholly naturalistic exposure, Ioup *et al*.

[1] We use 'MAD' here as a cover term to indicate processing that involves some level of conscious attention to form/information about language. The content of the MAD is beyond the scope of this paper and has been discussed in great detail in the sources referred to here.

[2] But it is also rightly assumed that the issue is an extremely complex one; for an early overview, see Birdsong (1989).

claim she provided her own instruction, and was only therefore able to match the level of the other learner, who was heavily instructed. Other studies similarly conclude that because L2 adults who turn out to be more advanced have spent some time in classrooms, MAD use therefore plays an instrumental role in compensating for inefficient post-puberty LAD use (see early review in Ellis 1990).

Determining how to harness this third source of knowledge to complement the second source , the LAD, has essentially been the focus of past as well as recent trends in L2 pedagogy, for example VanPatten's Input Processing (e.g. VanPatten 2004) and the Noticing Hypothesis (Schmidt 1990; Robinson 1995). On the other hand, L2 acquisition researchers have rejected the idea that application of knowledge about language (MAD use) can result in knowledge of language, in linguistic competence. This is Krashen's (1985) non-interface position and Schwartz's (1993) modularity of mind assumptions for L1 acquisition applied to L2 acquisition. Within a generative linguistics framework, assuming the existence of innate linguistic mechanisms available from birth, only primary linguistic data - exposure to ambient language – can build linguistic competence. Those forms of input that involve varying degrees of MAD use, from corrective feedback to explanation can only build learned linguistic knowledge. In addition, under a modular view of language, knowledge is encapsulated such that learned linguistic knowledge cannot be transformed into linguistic competence.

Certainly there is ample evidence that when adult L2 learners receive input that is not in the form of primary linguistic data this alters their linguistic behavior in some way; if this were not the case, there would be little to explore under the heading of instructed second language learning. As noted above, studies typically assume MAD use promotes

L2 development or has at worst a neutral effect due, for example, to the timing of the instruction (Pienemann 1987). Felix (1985), however, proposes that the operation of linguistic mechanisms is hampered by post-puberty learners' use of general cognitive mechanisms. Under his Competing Cognitive Structures proposal, MAD use blocks LAD operation. In what follows, we pursue Felix's CCS proposal.

It is difficult to see how the interface issue can be straightforwardly addressed if the possibility exists that any utterance produced by an adult L2 learner might involve all three sources of knowledge, i.e. the L1, linguistic mechanisms (Universal Grammar/the LAD), and metalinguistic knowledge. Researchers have become skilled at investigating L1 influence and the operation of UG (see e.g. White 2003), but how one goes about determining whether the LAD or the MAD is responsible for a given utterance has largely eluded investigators. Compounding the problem is the likelihood that learned knowledge can be automatized to the extent that the L2 learner requires no time to monitor prior to production (Sharwood Smith 2002).

However, it is difficult to determine whether non-PLD input contributes to learned linguistic knowledge or whether it actually restructures the L2 learners' linguistic competence. We can reasonably begin to sort this out by considering what LAD use vs. MAD use predicts terms of learner behavior - in other words, by applying linguistic theory when in the case of LAD use (Schwartz 1993:152). The following is a demonstration of how linguistic theory and research methodology in language acquisition - our linguistics toolkit - enables us to investigate the contribution to adult L2 language behavior of three potential sources of knowledge: the learner's L1, Universal Grammar and metalinguistic knowledge.

Adult L2 learners of German

Few if any studies have examined the effects of metalinguistic processing - of MAD use - on emerging linguistic competence during adult second language development. A one-year longitudinal study of three *ab initio* adult learners of German afforded such an opportunity. Investigating the acquisition of a morphologically rich language such as German allows us to take a close look at close look at how form, function and meaning interact.

German background

In German both indefinite and definite articles mark the case, number and gender of nouns, as shown in (1) .

(1) Der Mann schenkt dem Kind einen Hund..
the-masc.-nom. man gives the -neu. dat. child a-masc. acc.
'The man gives the child a dog.'

With respect to verbal syntax, agreement with the subject is marked on either the main verb or on a copula, auxiliary or modal verb. Tense marking involves an auxiliary verb plus a past participle, as shown in (2b).

(2a) Claudia trinkt immer Kaffee aber ich trinke normalerweise ee.
Claudia drinks always coffee but I drink normally tea.
'Claudia always drinks coffee but I normally drink tea.

(b) Kaffee habe ich gestern getrunken, weil ich heute viel Tee trinken muss.
I have yesterday coffee drunk because I today much tea drink must I
'I drank coffee yesterday because I have to drink a lot of tea today.

The examples in (2) illustrate two further facts about German. In both (2a) and (2b), the finite verb in declarative clauses is in second position resulting from the CP being head-initial; it can be preceded by a single constituent, which in (2a) is a subject, but in (2b) an object. (2b) illustrates that the VP in German is head final: in declarative clauses the participle (or any other non-finite verb form) follows all other material. However, because AgrP in German is also head final, in embedded clauses the finite verb follows the non-finite verb.

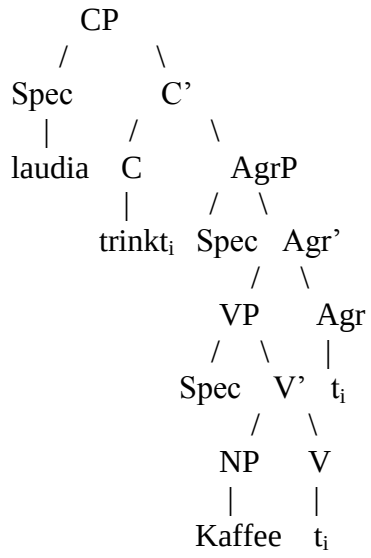
Table 1. Main verb agreement: *trinken* 'drink'

person	***singular***	***plural***
1st	trink-e/0	trink-en
2nd	trink-s(t)	trink-t
3rd	trink-t	trink-en

Table 2. Forms of *haben* 'have' and *sein* 'be'

person	***singular***		***plural***	
1st	habe/hab	bin	haben	sind
2nd	has(t)	bist	habt	seid
3rd	hat	ist	haben	sind

(3)



Sources of knowledge

The data to be discussed come from three English-speaking post-puberty learners, Joan, Paul and George whose first exposure to German was when they arrived in a large city in standard-dialect-speaking Germany in July 1996. Starting three weeks after their arrival, data were collected from each learner on a monthly basis using interviewing techniques and by conducting a number of elicitation and judgment tasks. None had substantial experience in formal foreign language learning, as Table 3 shows, and their development of German proceeded generally without instruction during the year they spent living with host families and attending German secondary schools as matriculated students. They were essentially naturalistic learners, expected to use their LAD to acquire German (but see below).

Table 3. The learners

LEARNER	EXPOSURE to foreign languages	AGE at arrival
Joan	1 month of Spanish; no German	16
Paul	1 semester of French; no German	17
George	1 year of French; no German	15

Importantly, all three participated in a four-week language and culture course in July when they first arrived. Together with other monolingual *ab initio* American exchange students, they spent mornings on the rudiments of German grammar, using a textbook and led by a teacher who spoke to the group in English. The book, *Neugerig auf Deutschland? Basis Deutsch in 20 Lektionen* ('Curious about Germany? Basic German in 20 Lessons'), combined the notions and functions of the European Communicative Approach with grammar explanation and translation. All grammar points (including various paradigms), and only grammar points, were presented in pink-shaded boxes in

this text, presumably to create visual salience. Grammar presented in the earliest lessons included main, copula and auxiliary verb conjugation. Subsequent lessons introduced the dative (Lesson 3, pages 34 - 35), separable prefixes in declarative main clauses and genitive case marking (Lesson 4 pages 41 and 51, respectively), pronouns in all cases and modal verbs with non-finite verbs in declarative main clauses (Lesson 5, pages 53 and 58, respectively). Detailed in Table 4 is the grammar content of the two earliest lessons; we include only these details based on the assumption that at least Lessons 1 and 2 were completed during the duration of the 4-week course (information was not gathered on how far along in the book the teacher actually attempted to take her students). The further relevance of the grammar presented in these two lessons will become clear below.

Table 4. Explicit grammar in pink boxes in early *Neugerig auf Deutschland?* lessons

Lesson 1
p. 3 *sein* ‘ to be’ paradigm (present tense)
p. 4 explanation of *du, ihr* and *Sie* ‘you’ singular plural/formal forms of address
p. 5 nominative definite articles; the five types of plural
p. 6 word order in declaratives and Wh-Qs (*Ich heisse Paul. Wie heisst du*? ‘I’m called Paul. What are you called?’)
- use of term 'position two'
p. 7 *haben* ‘have’ paradigm (present tense), with direct object example
p. 9; 16 main verbs *machen*; *essen, nehmen* and *sehen* ‘make’; ‘eat’; ‘take’; ‘see’ in the present tense agreement paradigms, with direct object examples

Lesson 2
p. 20-21 explanation of case and articles: definite and indefinite, accusative
p. 23 nominal negation with *kein* ‘ no’ (*nicht* ‘not’ in Lesson 5, page 59)
p. 25 yes/no questions
p. 26 *antworten* ‘answer’ paradigm

Thus while the vast majority of input these learners received in German during the year they spend in Germany constituted primary linguistic data, on the basis of their four-week language course, we assume that the MAD was also operative. Observation of the students during a class session by the second researcher and negative comments about the course made during subsequent data collection sessions indicated that motivation to benefit from the language classes was low; this was doubtless compounded by the fact that there was no requirement to passing any language tests and the host families learners lived with during that month all had English-speaking members. During these four weeks the amount of naturalistic exposure learners got was negligible; these teenagers spent most of their time that month inside and outside of class with their fellow students.

Data collection

Data were collected on a monthly basis through animated conversation with the learners about their unfolding exchange experience as well as through administering the battery of broad and narrow tasks, including grammaticality judgment tasks; those tasks involving morphosyntax are shown in Table 5. The resulting data were in the form of oral production. While some of the tasks involved some reading, learners' responses were always oral.

Table 5. Data elicitation tasks

TASK	ACTIVITY
BROAD ELICITATION TASKS	
procedure description	describing steps depicted in a series of pictures (making an omelet, assembling a bed)
picture prompt	forming utterances with magazine pictures of people, animals, food and objects; variant with subject pronouns written on cards
negation	forming negative utterances with magazine pictures

negation	talking about what's missing or different in a second, *nearly* identical picture
20 questions	guessing what experimenter is thinking of by asking yes/no, wh-Qs
on-line translation	orally translating into German English sentences read out loud by the researcher
NARROW ELICITATION TASKS	
modals	forming utterances with X can/wants (kann and möchte supplied orally) w/ drawings of people engaged in activities
question formation	asking questions using cards with wh-words & non-finite verbs written on them
embedded questions	same as above, but with 'ich möchte wissen' and 'ich weiß nicht' written on cards
clause joining	combining written strips with short clauses written on them
supply the missing word (finite verb)	producing sentences based on strips w/ missing word; learners tried to supply verb variant: strips split into two; learners combined, supplied verb
grammaticality judgment	judging sentences with grammatical and ungrammatical V2; rated 1-5, correction with think-aloud on sentences rated 3,4 and 5

Learners' L2 German development

MAD use profiles

To what extent do the learners show evidence of using their MAD? Since Schmidt (1990), there has been considerable discussion on how to determine whether a learner notices forms in the input that signify grammatical function. Schmidt and others (e.g. Robinson 1995) propose a Noticing Hypothesis which predicts that input only becomes intake when elements are noticed. But noticing will result in development only when the learner understands the function of what has been noticed. How can we determine when a naturalistic, non-classroom learner notices something? Used as a measure of meta-linguistic awareness by young children learning their first language (Gombert 1992), we

took the frequent self-correction our three learners engaged in one sign of noticing. Learners self-corrected case and gender, subject-verb agreement and word order (though not always producing the correct target form or construction). As an additional measure, we considered meta-linguistic comments made during the data collection sessions as evidence that forms had been noticed, with understanding determined by the quality of these comments. The remarks below are representative of what the three learners said during interviews (there is a roughly a one-month lag in the data collection sessions; thus session IX took place during the tenth month of the learners' stay in Germany, i.e. since their initial exposure to German). Because many of the tasks prompted attention to grammar, it was during these tasks that such comments were most often made (and sometimes elicited, as in (5) where M=interviewer); elicitation of such comments was the aim of the grammaticality judgment task. For this task, learners read a set of declarative clauses which involved the finite verb in grammatical second position preceded by a non-subject constituent (as in 2b above) or in ungrammatical third position, as in (4):

(4) * Gestern ich habe Kaffee getrunken.

Once learners had marked with a check each utterance they felt was not good German, reasons for their decisions were then probed, and they were further asked about examples which they might not have marked as ungrammatical but for which the suspicion existed that the sentences were not understood.

(5) Joan Session IX (during Grammaticality Judgment Task)

M: Weiβt du was 'den Mann' ist?
know you what the (acc.) man is?
J: *Etwas mit Grammatik. Oder ich weiβ nicht. Ich kenne überhaupt nichts mit Grammatik.*
something with grammar or I know not I know absolutely nothing with grammar

The next example comes from a task in which there was essentially no meta-linguistic focus. Yet Paul expressed deep concern in this and every session with his progress in German long the lines of the question he asks in (6).

(6) Paul V (during Picture Description Task)

P: *Ein Mann wills, willst jetzt mein Stuhl um sit, sitzen*.
a man wants wants now my chair uh sit sit
P: *Can you say this? Like to sit? Set. Sitz. I don't know. I've never heard it. I never heard it used that way.*
M: How've you heard it used?
P: *Sitzt. Like to sit. But I don't know if you can add an -en to make it-*
M: To make it what?
P: *Whatever. To make it whatever they do. I don't know*.

Both Joan's and Paul's comments reveal little understanding of what they had noticed; their MAD use is not dissimilar from the meta-linguistic processing young children engage in (see Gombert 1992; Young-Scholten 2004) albeit with use of terms like 'grammar' and 'verb' and 'noun' where pre-school children would not use such terms. In his third (7a) and his twelfth month (7b) in Germany, George demonstrated what is typical of his approach to his developing German. He not only notices, but understands the function of what he is noticing, accurately using such terms as 'accusative' and recounting details of the content of the German grammar book and the language lessons. This is likely the result of his longer exposure to classroom foreign language instruction,

i.e. to French for a year, and importantly, his self-reported positive attitude towards this experience at the time.

(7a) George II (during Word Combining Task)
G: *Was hast du getrinken? Ooh, I'm doing these wrong.*
M: Why?
G: *I could use different forms and they'd be easier. I don't' remember all the forms with grammar. I just put them all in the past tense.*
M: Oh, ok. Is that easier?
G: *For me it is, yeah.*
M: Why?
G: *I don't know. That's the only thing I really got was the perfect.*

b) George XI (During Grammaticality Judgment Task)

G: *Four verbs in a sentence. What do I do?*
M: Yeah.
G: *Then I think for about a minute and I don't know. And then that's it.*
M: So, do you ever, like, listen?
G: *I played around with the verbs when I'd look at people, when they scowl their eyes or something like they don't undertand. Then I think that's wrong.*

G: *Writing helped a little, too. I had to write a few reports. And seeing them on paper. Just seeing patterns on paper where verbs ougta go. I still haven't figured out with three or four verbs but I think if I write another three or four reports I'll probably figure it out.*

George seems to be an ideal second language learner, one who will use a well-developed MAD to enhance operation of the LAD. How does his linguistic development compare with that of the other two? Table 6 shows the three learners' accuracy on one of the forms they were taught in the initial lessons of the orientation course (Lesson 1, page 7). Not only does George more often use forms of *haben* correctly 37/43 (86%), he also produces more forms of *haben*. Paul is at the other end of the spectrum, with a few over-generalised forms (1/6 = 16% accuracy) and Joan is in the middle, producing correct forms 50% of the time (9/18).

Table 6. Accurate use of *haben* 'have' in Files I & II

	***habe* (1sg)**		***hast* (2sg)**		***hat* (3sg)**		***haben* (1 & 3 pl)**		***habt* (2pl)**	
	correct	**wrong**	**correct**	**wrong**	**correct**	**wrong**	**correct**	**wrong**	**correct**	**wrong**
Paul	0	5	1	0	-	-	-	-	-	-
Joan	3	3	4	5	1	0	1	1	-	-
George	5	0	9	4	10	0	8	2	5	0

Some two months after their orientation course ended - by which time they had received considerable naturalistic linguistic input living with host families and attending German secondary schools - the learners attempt to mark case and gender often enough to allow analysis of the data. Obligatory contexts for articles were also examined, and yielded the scores for omission of articles, i.e. *zero article shown in Table 7. Article production after prepositions in prepositional phrases might be expected to exhibit a higher right of accuracy due to the potential for prepositional phrase to be memorized as chunks, yet accuracy rate was even lower: Joan 17% (1/6); Paul 0% (0/4) and George, 37% (3/8).

Table 7. Correct (for case and gender) article use in File III

	Joan	**Paul**	**George**
ein	1/1	6/11	5/11
eine	1/5	1/1	0/0
der	3/5	4/11	3/9
die	4/9	3/12	7/14
das	0/0	3/9	3/3
den	0/1	0/0	1/1
dem	1/1	0/0	0/0
uh	0/2	0/0	0/0
*zero article	0/11	0/2	0/1
Mean	**29% 10/35**	**37% 17/46**	**49% 19/39**

As was the case for *haben*, George produces a wider variety of forms than Joan or Paul. These include correct use of *ihr 'you'* informal, plural and *ihre* ' her' possessive. We take early use irregular agreement with respect to *haben* and of case and gender and be

evidence of MAD operation, given past studies which show that irregular agreement and case do not emerge at the early stages of completely naturalistic acquisition (i.e. for learners who had received no language orientation courses, e.g. the ZISA learners discussed in Clahsen and Muysken 1986) even where the potential for L1 transfer of such categories exists. For both case and gender marking and the *haben* paradigm, George confirms the above supposition regarding his MAD use: his development of German is further along in terms of a higher degree of accuracy and a greater variety of forms in comparison with Joan and Paul.

A considerable amount of research on post-puberty learners of German as well as other second languages points to the conclusion that adult learners use the same mechanisms as children when acquiring the syntax of a second language (see e.g. White 2003). And if - contrary to what Krashen and Schwartz claim - the LAD and MAD complement each other, then a good MAD user such as George should certainly develop faster and further than poor MAD users such as Joan and Paul.

Minimal Trees/Structure Building and L2 German

In addition to English, studies on the acquisition of German by adult speakers of Korean, Italian, Spanish and Turkish suggest that the second language learner starts with Minimal Trees, a bare VP, transferred from the first language (see Vainikka and Young-Scholten 1994; 1996). The learner then subsequently engages in Structure Building, whereby functional projections are gradually built up through the interaction of the input with Universal Grammar. (For English see Radford 1990 for first language acquisition and

Hawkins 2001 for second language acquisition). Table 8 summarizes the types of syntactic and morphological evidence for the early stages.

Table 8. Stages in L2 acquisition of German (pre-CP)

VP-stage	FP-stage	AgrP-stage
initially bare L1 VP, then bare German VP	first functional projection; head initial	head-initial projection
no verb raising	some verb raising (optional)	frequent verb raising
no modals/auxiliaries	some modals/auxiliaries	common modals/auxiliaries.
no agreement paradigm	no agreement paradigm	presence of agreement paradigm
no complementizers	no complementizers	some complementizers
no complex WH-movement	no complex WH-movement	some complex WH-movement

Turning to Joan, Paul and George's morpho-syntactic development, we predicted above that in his acquisition of German, George would demonstrate more rapid progress than Joan or Paul. Yet according to Krashen and to Schwartz, the MAD should be unable to exert any influence on the LAD; in the absence of any such influence there should be parallel development for all three learners.

Joan, Paul and George's morpho-syntactic development in German

We consider the data from our MAD user, George, separately from Joan and Paul. The stages of development proposed previously (Vainikka and Young-Scholten 2002) are summarized in Table 9.

Table 9. Paul's and Joan's syntactic stages

Stage	Description	Files	Similar to English?
1	head-initial VP only	Paul/Joan I-II	yes
2	VP switches to head-final	Paul/Joan III	no
3	head-initial AgrP added	Paul/Joan III-IV [*]	yes
4	head-initial CP added	Paul/Joan VII	yes
5	AgrP switches to final	Paul XI/Joan IX	no

[*Paul posits the AgrP in File IV, while Joan's data show the beginnings of the AgrP in File III – more clearly in File IV]

At Stage 1, the basic VP projection is transferred from the L1. At Stage 2, the headedness of the VP is switched to the German setting. Joan and Paul then proceed to add functional projections to the tree, from the bottom up. At Stage 3, a head-initial AgrP projection is added, as evidenced by the emergence of agreement (and the overgeneralization of the 2*sg*. suffix *–st*; see Vainikkka and Young-Scholten 1998a). This projection is a head-initial one, presumably due to the obvious misanalysis of finite verbs; the projection is switched to the target head-final setting (at Stage 5) only after the emergence of the CP at Stage 4.

As has become clear in the previous section, George differs from Paul and Joan in two main ways: he is more advanced in terms of morphology than the other two speakers, and he is more "metalinguistically aware" than the other two; we have suggested above that the two are connected. Given a tight coupling in syntactic theory of inflectional morphology and syntactic structure, we might expect that George's advantage in, say, the verbal agreement paradigm, would give him an advantage over the others in terms of syntactic structure. However, it will become clear that the opposite situation holds: George consistently lags behind the other two in the development of syntax. We propose

that this is due to the "metalinguistic baggage" that he carries, which interferes with the UG-based unconscious mechanism of Structure Building. In Felix's (1985) terms, the 'competition' of general cognitive mechanisms with linguistic ones results in the linguistic mechanisms losing out.

With respect to the theory of L2 acquisition, the most important stages in Table 9 are those which differ from English, namely Stage 2, where the VP switches to head-final, and Stage 5, where the AgrP switches to head-final. For the other stages, these data alone do not tell us whether or not the head-initial AgrP and the head-initial CP have been transferred from English (although previous research on Turkish and Korean speakers learning German shows that even they posit head-initial functional projections early on, although their L1s are consistently head final). Stages 2 and 5 are the ones that really tell us what is happening with George's data.

As far as the headedness of the VP is concerned, George – like the other two – transfers the head-initial VP from English. In his first three files, the head-initial VP dominates, as shown in Table 10. From File IV on, the VP is head-final in his spontaneous data. Thus, George switches his VP to head-final one recording (about one month) later than Paul and Joan.

Table 10: George's VP headedness

File	VO in Modal Task	VO in Spontaneous 2-verb	% of VO	Headedness of VP
I	5/6	0/0	83%	initial
II	9/9	6/8	88%	initial
III	7/7	14/17	87%	initial
IV	6/8	2/23	26%	final
V	0/7	[no recording]	0%	final
VI	0/9	0/26	0%	final

Let us now turn to the IP-level projection, AgrP. In George's File I, there is no evidence of the functional projections IP or CP (provided we discount the obviously memorized irregular paradigm for *haben* 'have'—recall Table 6). Already in File II, there are hints of an IP-level projection, but in File III, the agreement paradigm begins to clearly emerge (suggesting an AgrP projection), and auxiliaries and modals become more common. Table 11 gives the pattern of verb agreement found in George's File III:

Table 11: George's verb agreement (File III; main verbs only)

Suffix [Person/Number]	**Correct**	**Incorrect**	**Unclear**
0 [1sg.]	2	1	0
-e [1sg.]	7	0	0
-st [2sg.]	1	4	0
-t [3sg.]	32	3	2
-n [1/3pl.]	11	11	0
-t [2pl.]	2	0	0

As is common in the acquisition of German, the plural suffix *–n* is used as a default form, often for singular reference as well. However, George has clearly acquired the 3rd person singular *–t* form (91% correct), and he is progressing well with the 1st person singular endings (0 and *–e*; 90% correct). George's metalinguistic knowledge about the regular and irregular verbal agreement paradigms and about grammar presumably facilitates positing an English-like head-initial AgrP. However, such metalinguistic knowledge would not help in positing the head-final VP; rather it appears to delay this process.

Let us now consider the last two stages shown in Table 9 above: the addition of a head-initial CP and the switching of the headedness for AgrP. In George's Files I-II there are no spontaneously produced CP constructions, i.e. there are no embedded clauses with

an overt complementizer, no embedded WH-questions and also no non-formulaic main clause WH-questions. In File III we find the first two embedded clauses with an overt complementizer (1 instance of a clause beginning with *weil* 'because' and 1 instance of clause beginning with *wann* 'when'); there are no other spontaneously produced CP-constructions in George's 131 utterances in this file. In fact, through File VII, George's spontaneous data contain only hints of CP-constructions. Table 12 provides a summary of George's embedded clauses with overt complementizers produced either spontaneously, or in one of the two tasks eliciting embedded clauses (embedded WH-question task; oral translation task); the position of the finite verb is given. Here *aber* 'but' clauses have been omitted because they are not strictly embedded clauses; as in English, *aber* German can introduce what appears to a matrix clause: "But I didn't know you had left!". Embedded clauses without an overt complementizer ("0") have also been omitted because they may have been direct translations from English; unlike the English complementizer 'that', the German *dass* cannot usually be omitted. Finally, *weil* 'because' clauses have been omitted because in modern German their word order shows variable use of matrix clause word order – as they always do in George's data.

Table 12 reveals two things: First, that George begins to produce embedded clauses with overt complementizers spontaneously from File VIII onwards, suggesting that a head-initial, target-like CP projection is posited by this point. Recall that Paul and Joan posited this projection one data collection session - one month - earlier. The other finding shown in Table 14 is that in embedded clauses the finite verb overwhelmingly occurs in the matrix clause position, suggesting that George never switches the AgrP to head-final.

Table 12: Position of finite verb in George's embedded clauses [excl. *weil*, *aber*, 0*]

	Spontaneous embedded clauses			**Elicited embedded clauses**		
File	Finite-end	Finite-V2/V3	Other	Finite-end	Finite-V2/V3	Other
VII	0	0	0	0	11	2
VIII	2	13	1	0	12	1
IX	1	23	7	2	8	1
XI	0	23	12	6	8	4

In Joan's data, we in fact find two distinct sub-stages for Stage 5 (as shown on the last 2 lines of Table 13 below): an earlier stage where the finite verb occurs in the sentence-final position in certain constructions, and a later stage where the finite verb is final in all embedded clauses.

Table 13. The syntactic stages for Joan, Paul, and George

Stage	**Description**	**Joan's file**	**Paul's file**	**George's file**
1	head-initial VP only	I-II	I-II	I-III
2	VP switches to head-final	III	III	IV
3	head-initial AgrP added	III-IV	IV	III
4	head-initial CP added	VII	VII	VIII
5-i	AgrP switches to final	IX	XI	[never]
5-ii	AgrP final throughout	XI	[never]	[never]

Paul is slightly behind Joan in that the earlier sub-stage is clearly evidenced in File XI; the second sub-stage would fall beyond our data collection (the learners returned to the USA upon completion of their year in Germany, several days after the data for File XI were collected). In George's data, however, there is no hint of even the earlier sub-stage: throughout the recording sessions his spontaneous data reveals that he has retained a head-initial setting for the AgrP in all types of embedded clauses. As we have seen, stages 2 and 5 are delayed compared to the other two speakers.

Conclusion

Our research shows that given sufficient input naturalistic learners readily acquire the complex word order of German. However, in the case of George use of the Metalinguistic Acquisition Device (MAD) seems to impede development or 'compete' with the LAD (Felix 1985). Why should this be the case? In generative grammar, it is commonly assumed that inflectional morphology triggers syntactic parameters (see e.g. Lightfoot 1999; Vainikka and Young-Scholten 1998a). George is in a sense not extracting the inflectional morphology from the primary linguistic data surrounding him, but rather, he focuses on memorizing paradigms from a grammar book. While he is indeed *acquiring* syntactic structure, he appears to be *learning* some of the crucial morphology. This is a mismatch which prevents the LAD from operating efficiently.

These findings regarding an individual one would consider a good language learner have implications regarding the assumptions that the Noticing Hypothesis entails. George shows himself to be skilled at focusing on form, yet this has either a neutral[3] or a delaying effect on his linguistic development. It may well be that the sort of forms requiring some sort of attention (though not at a conscious level) are those non-salient forms thought to have an indirect relationship to syntax, i.e. as triggers (see e.g. Lightfoot 1999). In any case, similar longitudinal studies of naturalistic L2 adults in input-rich environments are needed. Such studies have the potential to shed considerably more light on the under-researched and unresolved issue of whether metaglinguistic awareness and knowledge affect the development of linguistic competence in a second language. Until

[3] In fact, by the end of the study his apparent early advantage in case and gender marking had declined to reach a level similar to that of Joan's and Paul's.

additional findings from future studies are forthcoming, hypotheses regarding the relationship between noticing and acquisition must remain premature.

References

Birdsong, D. (1989) *Metalinguistic Performance and Interlinguistic Competence*. Berlin:Springer Verlag.

Ellis, R. (1990) *Instructed Second Language Acquisition*. Oxford: Basil Blackwell.

Felix, S. (1985). More evidence on competing cognitive systems. *Second Language Research* 1:47-72

Glinsky, A. & M. Loeschmann. (1996). *Neugerig auf Deutschland? Basis Deutsch in 20 Lektionen.* Deutsches Youth for Understanding Komitee e.V. Hamburg. 254 pages

Gombert, J. É. (1992) *Metalinguistic Development*. London: Harvester Wheatsheaf.

Hawkins, R. (2001). *Second Language Syntax*. Oxford: Blackwell.

Ioup, G., E. Boustagui, M. El Tigi, and M. Moselle (1994). Re-examining the critical period hypothesis: A case study of successful adult SLA in a naturalistic environment. *Studies in Second Language Acquisition.* 16.73-98.

Krashen, S. (1985) *The Input Hypothesis: Issues and Implications*. London: Longman.

Lightfoot, D. (1999) *The Development of Language*. Oxford: Blackwell.

Pienemann, M. (1987) Psychological constraints on the teachability of languages. In C. Pfaff (ed.) *First and Second Language Acquisition Processes*. London: Newbury House. p. 143-168.

Robinson, P. (1995) Attention, memory and the noticing hypothesis. *Language Learning* 45:193-215.

Schmidt, R. (1990) The role of consciousness in second language learning. *Applied Linguistics* 11:129-158.

Schwartz, B. D. (1993) On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition* 15:147-163.

Sharwood Smith, M.. (2002) Losing LAD and getting MAD: on acquiring parallel language systems. Talk presented in the Univeristy of Durham Linguistics Colloquium, 3 June.

Vainikka, A. and M. Young-Scholten. (1994) Direct access to X'-Theory: Evidence from Korean and Turkish adults learning German. In T. Hoekstra & B.D. Schwartz (eds.) *Language Acquisition Studies in Generative Grammar*. Amsterdam: Benjamins.

Vainikka, A. and M. Young-Scholten. 1996c The early stages in adult L2 syntax: Additional evidence from Romance speakers. *Second Language Research*. 12: 140-176.

Vainikka, A. and M. Young-Scholten. (1998) Morphosyntactic Triggers in Adult SLA. In M. -L. Beck (ed.) *Morphology and its Interfaces*. Amsterdam: Benjamins.

Vainikka, A. and M. Young-Scholten. (2002). Restructuring the CP in L2 German. *Proceedings of the XXVI Conference on Boston University Conference on Child Language Development.*

VanPatten, W. (2004). *Processing Instruction.* Hove. Lawrence Erlbaum.

White, L. (2003). *Second Language Acquisition and Universal Grammar.* Cambridge: CUP.

Young-Scholten, M. (2004). Longitudinal naturalistic data: Treasures out of Pandora's Box. In Gisela Holzer (ed.) *Voies vers le Plurilinguisme*. Besançon: Presses Universitaires de Franche-Comté.